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Implications of the "School is Out, But Class is On" Program for the Future of Online Education

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The prevention and control of the COVID-19 pandemic has caused sporadic suspensions of offline instruction in schools across China. The "School is Out, But Class is On" initiative, started by the Education Ministry of China, is an efficient substitute for regular classroom instruction in this situation. The widespread use of online learning has increased teachers' digital literacy and experimented with student autonomy, but it has also highlighted a number of issues, including inadequate online learning environments, an uneven distribution of digital teaching resources, and students' inability to adjust to self-directed learning. With the aim of offering guidelines for effective deployment of online teaching in China as a crisis response plan and offering insight into the further integration of traditional classroom instruction and digital education, we attempt to systematically examine the outcomes of its implementation as well as the challenges it faces in practice. This is done on the basis of a review of existing studies on this online teaching program.

Keywords: The "School is Out, But Class is On" Program; Online Teaching; COVID-19 Pandemic; Online Home Study

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INCE the onset of the COVID-19 Pandemic, the highly contagious disease has infiltrated China's 30 provincial administrative regions to varying degrees. The Chinese Ministry of Education originally launched the "School is Out, But Class is On" program on January 29th, 2020, which literally means that school is closed, but student learning continues online (1). Suspending classes without interrupting learning is an extraordinary task for education policymakers and administrators, as well as front-line teachers, students, and parents, as an

emergency response plan during the specific period of pandemic prevention and control. In an effort to reduce the impact of school suspensions and enable technology-enabled "anytime, anywhere learning," all provinces and cities around the country have developed particular strategies to employ digital technology to support teacher online education and student home-based learning. Nonetheless, the program's implementation results demonstrate that the transition from traditional classroom education to digital teaching is not as smooth as envisioned; the

time and energy invested by teachers and students in online home learning have not yielded the desired results. As a result, radical reform of educational conceptions is required to remove barriers to the successful implementation of digital technology in education. This paper explains the advantages and problems of current digital learning through an analysis of the implementation results of the "School is Out, But Class is On" program, with the goal of exploring the prospect of long-term growth of online education in the information technology era and reaching a deeper understanding of the potential development of digital instruction.

The Background of the "School is Out, But Class is On" Program and the Major Models of its Implementation

Despite the importance of in-person schooling, the safety of teachers and students was given the highest priority in the face of the COVID-19 danger. When a city or district is infected with an infectious disease, the best course of action for the educational community is unquestionably to cease offline classroom instruction (2). The popularization and application of information technology, particularly the development of online educational platforms and resources, enables schools and teachers to bring offline instruction online and sustain student learning via live classroom, pre-recorded video classroom, etc.

Three main teaching approaches are used in the "School is Out, But Class Is On" program: online synchronous live stream teaching, online asynchronous teaching, and online coordinated teaching. Online synchronous live stream teaching uses the internet and information technology to allow teachers and students to do educational tasks simultaneously and at the same pace across space. To conduct audio and video communication, presentations, real-time discussions, and other instructional activities, they typically need live broadcast or video conference capabilities. This type of communication is quick and simple, requiring no technical expertise. Teachers and students engage in asynchronous online instruction at various times and locations. Students can access pre-recorded instructional videos, browse additional learning resources, submit learning results, and take tests through the school's online learning platform, and teachers can publish resources, grade homework, and respond to students' inquiries. The student creates their own learning plans for each subject in accordance with the teacher's expectations, and they finish the learning materials on time while being watched over by their parents. This is a personalized learning model. A multi-agency collaborative education method called online coordinated teaching is based on big data, 5th generation mobile communication technology, artificial intelligence, and other information technologies. It allows for the precise distribution of high-quality educational resources across various platforms. Students can also identify their own learning challenges on the dashboard of the intelligent big data analysis platform, ask questions on the artificial intelligence learning platform, and receive immediate responses from online teachers in the form of real-time audio, video, texts, or micro-lectures.

The Implementation Results of the "School is Out, But Class is On" Program

Preliminary Achievements of the "School is Out, But Class is On" Program

According to the findings of prior studies, digital teaching plays a significant role in the development of student adaptive learning potential. Simultaneously, online learning transforms teachers' instructional conceptions and provides students with greater autonomy in learning, such that students are no longer considered as knowledge-absorbing machines but as knowledge builders and generators.

Changes in Educational Concepts of Teachers

Numerous teaching theories that advocate for student-centered instruction believe that the purpose of education is not to transfer knowledge, but rather to foster student learning ability. According to Robert Mills Gagne (3), teaching is a job oriented toward assisting people in learning and that teachers should function as "managers" or "coaches," supervising and promoting student learning. The "School is Out, But Class is On" campaign challenged educators to modernize their educational concepts and practices by encouraging them to reflect on old teaching approaches. In her examination of questionnaire data from junior secondary school English-language teachers and students in Ziyang City, Sichuan Province, Fan found that the majority of teachers realized the benefits of distance education in the course of online teaching(4). Online teaching was deemed a viable coping technique for addressing school suspension during pandemic prevention and control by 66.659% of them, and it may foster student autonomy in learning. In addition, 23.1% of them agreed that online teaching facilitated one-on-one instruction with students, indicating that teachers have begun to consider or experiment with the educational concept of teaching students according to their ability and personalizing the learning plan for each student. According to Liu's) research, during the school suspension, teachers released online learning packages before class, which included the lesson's key points, learning objectives, learning task list, electronic textbooks, micro lectures, and self-study exercises, so that students could study independently in advance; based on students' feedback on self-study, teachers made targeted plans before class to improve the effectiveness of online classroom learning (5). Through the use of online interactive technologies, adequate time is allotted for students to engage in group discussions and brainstorming. These techniques stress the predominance of students in the learning process and increase their motivation to study.

Enhanced Accessibility and Equality of High-quality Educational Resources

China's economy has an imbalanced development due to its huge size, resulting in an unequal distribution of educational resources. In contrast to traditional education, online education has no geographical boundaries, which can assist in reducing regional inequities. Open online education platforms are available to anyone, regardless of location. The development of various school-based platforms and educational websites, as well as the application and popularization of innovative teaching tools such as "micro-lecture" and "flipped classroom" in basic education, not only ensures the quality of online education, but also significantly reduces the cost of educational resource delivery,

thereby maximizing the value of high-quality teachers. According to the research of Fan, when the pandemic broke out and schools were closed, the majority of teachers took proactive measures to maintain student learning. On the basis of the recommendations of local teaching researchers and the collaborative search results of school teaching research groups, beneficial internet resources pertinent to students' learning situations were picked and pushed to students in a timely manner. This unquestionably circumvented time and space constraints and significantly minimized student learning time loss (4). Shan et al. surveyed 419,258 students in many regions across the nation and discovered that digital learning resources are a major source of knowledge for student learning during pandemic-related school suspension; 87.3% of students could have timely access to digital learning resources; and the majority of students have improved their learning quality by using digital educational resources (6).

Deepening Integration of Information Technology into Education

The successful execution of the "School is Out, But Class is On" program depends on the development of the internet and information technology. The data mining technology enabled by cloud computing has been shown to be proficient in analyzing and evaluating student learning as well as providing students with feedback and recommendations. Additionally, it can turn student online learning information, as well as learning patterns, preferences, and behavior, into data. The online learning platform properly diagnoses students' learning needs by analyzing vast and complicated datasets. As a result, it can offer relevant learning resources and recommend the best learning techniques, which are beyond the capacity of humans (7). Additionally, online teaching platforms help teachers organize classes so they may gather information about students' attendance, academic progress, completion of assigned homework, etc. to better understand how effectively and efficiently students are learning (8). The fact that all teaching and learning processes have digital traces and can be tracked back is perhaps the most important benefit of online instruction. Education administrators can utilize data to dynamically track student adoption of online learning and assess the effectiveness of the instruction.

Enriched Learning Methods of Students

As "digital natives," students today see online learning as a unique and fascinating experience, as opposed to the dull traditional classroom learning. Guo et al. examined school administrators, teachers, students, and parents through a questionnaire in H County, a typical rural county in Henan Province, during the pandemic-induced lockdown and discovered that 52.97% of the children were highly satisfied with the existing online learning. 70.03% said internet home study was easier since they could play back the teaching videos recorded by teachers and go over the challenging parts again and again. Furthermore, 48.46% of them stated that online teaching may help decrease the sensation of separation between professors and students while increasing the frequency of teacher-student interaction (9). In online teaching, there are many new forms of media engagement, such as video interaction, text interaction, bullet subtitles, and so on, that

can effectively kindle students' excitement for learning. To encourage learning in each class, some professors may form QQ groups or WeChat groups and set a series of subject-based assignments. Teachers of Chinese literature, for example, can have students record their performances of textbook plays using mobile phones or tablets and post them to the class group. Such engaging exercises foster student initiative in learning and increase their sense of accomplishment. However, Li and Zhou questioned if there is a link between student learning satisfaction and learning outcomes. They claim that students enjoy online learning since it is a free and pleasant environment where they are not constrained by any particular disciplines. As a result, parental and teacher monitoring is also required for online education (10).

Challenges Faced by the "School is Out, But Class is On" Program

Although the "School is Out, But Class is On" program exhibited various benefits in practice, such as improved IT literacy of teachers, upgraded educational ideas, intensified classroom reform, and natural integration of educational technology into traditional teaching, problems have existed in its implementation, according to expert and scholar investigations of the actual situations of relevant groups and institutions.

Teachers' Incompetence in Digital Instruction

An abrupt shift from the classroom to the internet is the result of the practice of suspending schools while learning continues. Although they may have tried some information-based teaching in the past and be aware of what a flipped classroom and blended instruction are, the majority of teachers who are used to the traditional classroom teaching mode and approaches are not yet ready for this abrupt transformation. Numerous researchers have noted in their research that the majority of teachers are not proficient in creating online courses, let alone assisting students in resolving issues related to online learning. Their inability to operate digital equipment well prevents them from taking full advantage of its features, and their lack of familiarity with the wide range of network channels prevents them from effectively choosing high-quality teaching resources from the network. Teachers, students, and parents who were enrolled in the online teaching program were polled by Dai et al., who then used descriptive statistics and the chi-square test to examine the results. According to the survey results, a sizeable percentage of teachers were skeptical of the new teaching environment and alternative teaching methods; up to 40.4% of teachers thought that teaching online required more effort and time than in a traditional classroom, so it would take some time for them to get used to it; 28.77% of them had no idea how to use the equipment needed for online teaching; 39.41% of them believed they knew little about online learning systems (11). Li and Zhou's online study of teachers and students from schools in southern Jiangsu revealed that, in the short term, teachers' acceptance and adaptation to online teaching vary: As a result, inexperienced use of educational platforms and software is common, resulting in their inability to improve the e-learning experience. Therefore, for over half of the teachers, teaching online is only a short-term emergency response activity that does not fully utilize their true

teaching abilities (10).

Additionally, a larger percentage of professors lack the knowledge and skills necessary to manage online classes. The majority of traditional offline teachers lack the necessary abilities to manage the digital classroom efficiently over a network platform and foster excellent teacher-student interaction. Most students did not actively participate in the teaching tasks created by teachers, as evidenced by the fact that only 19.53% of teachers claimed that more than 90% of their students participated in all activities occurring on the teaching platform, according to Dai et al.. In online classrooms, the majority of teachers still use the traditional methods of communication, such as asking questions and giving homework, rather than creating more creative teacher-student interactions. About 64% of the teachers were unable to monitor students' learning progress, and that 48.87% of them believed that the "School is Out, But Class is On" program prevented teacher-student connection, and that 61.86% of them believed that online teaching could not guarantee immediate answers to students' inquiries and timely advice for student learning. Additionally, 42.31% of them reported having heard from students who said that online classrooms were dull and disruptive. Even those exceptional offline anchor teachers had difficulty connecting students and teachers when teaching online (11).

Students' Lack of Self-Regulated Learning Ability

The teacher's ability to supervise each individual student in an offline classroom is not as straightforward as it is in real time in an online class, where the teacher may examine students' learning situations, track their progress, and react quickly to those who are distracted from the lesson. Many students have no concept of self-regulation when they are not in the presence of teachers and lose sight of learning objectives when they are on their own. Classroom time may become fragmented as a result of trivialities such as snacking and surfing the internet. Students complained in Wan, Li, and Xiao's questionnaire survey that online learning lacked the classroom atmosphere inherent in in-person instruction, that they struggled to stay, focused on study without external supervision and discipline, and that they felt lost in the presence of other online instructors after becoming accustomed to the teaching methods of their own teachers. At the same time, students are more likely to feel lonely owing to a lack of peer companionship, and more than half of them said that being unable to engage with professors face-to-face would make them feel less secure (12).

The Lack of Home Supervision

Parents' assistance and supervision during online home study have a major impact on student learning outcomes. Parents' assistance in device use and network setup is especially important for lower grade students. However, most parents fail to carry out their parental responsibilities due to a lack of time or competence. According to the results of Zhang and Lin's survey, only 12.67% of parents (primarily grandparents) would accompany their children throughout the online learning process, 5.22% chose to supervise their children's learning of major subjects, and the rest had no interest in their online classes and could offer

no assistance when they encountered academic pressure in the new learning context (13).

Inadequate Network-based Supportive Facili-

Digital devices used by professors and students, network connectivity, and student learning settings all have an impact on online teaching orders. According to Zhu, 33.19% of the questioned teachers lacked professional equipment required for online education. Teachers in rural primary and secondary schools, as well as in public schools, required more real support. In rural primary and secondary schools, 40.28% of instructors reported a lack of equipment, which is much higher than the national average of 33.19%. At the same time, students faced the issue of insufficient gadgets, and about 44.32% of polled parents stated that in order to secure their children's complete participation in online classes, they must purchase mobile phones, PCs, or tablets on their own dime, which surely increases their financial burden. Furthermore, 60.22% of teachers reported student complaints about network connectivity varying between laptops and mobile phones of various configurations (14).

Aside from a lack of tangible equipment, network disconnection and network jams cause major problems for professors in online classes. Wang et al. used questionnaires and interviews to survey 59,156 elementary and secondary school teachers in Hubei Province. According to the results of the survey, 73.87% of teachers reported a significant frequency of network outages, which impedes online teaching progress. Concurrent use of an educational platform by a large number of online learners exceeded the platform's capacity, resulting in frequent network jams. Simultaneously, 50.57% of teachers reported that a poor network environment rendered some online educational activities inaccessible to students (15).

Poor network signal coverage renders the "School is Out, But Class is On" program infeasible in isolated, impoverished locations. In some rural places, teachers and students must hike several hours to the summit of a mountain in order to access the network connection, or ride for dozens of minutes to a certain location in order to "share the network." According to Zhang and Lin's online inquiry, 70.21% of the polled teachers stated that they required more robust technological support, and 49.55% considered that the telecommunications service should be more effective and extensive (13).

Insufficient Governmental Support

Regarding the control of the quality of online instruction, the country has not created scientific evaluation standards and frameworks. Numerous platforms and online teaching institutions have developed an abundance of online educational resources, but quality certification standards for these resources are not currently in place. Online teachers should receive the same methodical training as their offline counterparts, and qualification certificates should be necessary. Even while schools have independently generated their own digital instruction content and acquired additional educational resources from other training institutions, they are unable to meet the requirements of the "School is Out, But Class is On" program. Therefore, the government should increase its investment in online education

by coordinating anchor instructors to develop live courses on the internet and by requesting outstanding educational resources and distributing them for free to schools. Importantly, the government should mobilize national resources to support the program and include digital education development in its policy framework (16).

The Implications of the "School is Out, But Class is On" Program for the Future Development of Digital Education

Teachers Should Play a More Pro-active Role in the Digital Education Revolution

Currently, teachers hold predominantly negative opinions regarding the value, validity, and learning outcomes of online education. However, if they continue to be complacent, their abilities will diminish in the vibrant information era (17). A common understanding and practice of online teaching among many teachers has been "teacher lecturing online and students watching computers"; the teacher-dominated online classroom is antithetical to the promotion of personalized, in-depth learning and the development of students' all-around academic competence. Teachers should be aware that digital education does not simply entail relocating the traditional classroom online. Instead, they should develop proficient use of information-related technical tools in order to build different online teaching scenarios and investigate novel educational modes that integrate online and offline instruction (18). Teachers, for example, can collect high-quality resources from an online platform and incorporate them into their own teaching to make classroom practice more colorful, open, and engaging; they can also experiment with incorporating video and audio into the teaching content and designing more interactive activities to increase student participation. In addition, online teaching enables teachers to concentrate more on personalized one-on-one tutoring, assists students in developing proper learning habits and approaches, and stimulates a shift in teachers' roles from instructing to guiding, lecturing to motivating.

Educational technology should be integrated more deeply into classroom instruction.

Major internet companies are making every effort to promote the use of mobile terminals for consuming, social networking, reading, etc., in light of the growing number of mobile terminals and smart phone users and the expansion of wireless network coverage. Information infrastructure, network size, the digital economy, and network governance have also undergone significant transformations, which justifies the informatization and mobility of education (19). As "digital natives," the new student generation is more active in thought and keen on expressing their individuality. As a result, they tend to be less attentive when studying and less patient when dealing with tedious material and difficult information. Traditional "chalk and blackboard" cramming education lacks teacher-student contact and hence cannot satisfy the actual needs of today's students. Therefore, integrating blended instruction facilitated by technology into classroom instruction has become an inescapable trend in school education reform.

The openness, robust engagement, and independent study schedules of the online classroom were well-received by the Chinese education community upon its introduction to China in 2013. Since then, Chinese institutions of higher learning and businesses have made a commitment to creating China's MOOC curriculum platforms and other online resource banks in order to advance the transformation of classroom instruction and the dissemination of top-notch educational materials. The "School is Out, But Class is On" presentation marked the culmination of this investigation. The MOOC platform's network-wide accessibility allows for the easy dissemination of teaching materials on campuses. Students can exchange top-notch courses from different universities and broaden their horizons of knowledge. A ten-minute short film can teach each theoretical knowledge point, allowing students to watch it in small chunks of time, making the learning environment adaptable and kindling student learning initiative. The program will also suggest assessments on a regular basis based on how well students are studying, and students can take the tests online whenever they choose. The platform database collects the learning traces and test results so that teachers can monitor the students' learning progress in real time and provide customized instruction for various learning outcomes (20). The embedded course examinations and evaluations, as well as the course lecture videos, are supported by mobile internet technologies, allowing for on-demand teacher-student interaction. The meanings of teaching and learning are changing in unprecedented ways, and the concepts of a school and a classroom are being redefined. Online education is expanding the realm of human cognition and discovery. Millions of people participated in the extensive use of online learning during the pandemic's prevention and control, which highlights the crucial place that information technology plays in contemporary education.

The Nation Should Build an All-Round Supportive System for Online Teaching

Numerous other elements, besides teachers and students, affect the outcomes of online instruction. Multi-agency collaboration is necessary for the establishment of sustainable online education. China's education agencies must adopt the following steps in order to effectively promote and coordinate the development of information-based instruction: First, to give instructors more trustworthy and reputable sources from which to choose digital curriculum resources, it is first necessary to build a national online teaching resource directory. Second, the oversight of the quality of online instruction should not be based solely on the views of school administrators; rather, it calls for the development of impartial and thorough national evaluation standards and mechanisms. Third, coordinate the efforts of operators of online teaching platforms and online educational institutions to combine resources and create more useful online teaching platforms.

The government should give the educational system access to high-quality network connection channels so that the educational institutions can always get a highly effective network connection. At the municipal, district, and academic levels, it improves the upkeep of fundamental infrastructure, data computer rooms, cloud services, and video conference systems

and offers a reliable and robust operating environment for all types of teaching and educational applications. The coordination of the gathering of excellent micro lectures, MOOCs, electronic textbooks, and other resources and the sharing of them across all schools' online teaching platforms should be the responsibility of education departments at all levels in order to motivate them to conduct more online teaching activities (21).

The possibility presented by this online home study practice should be used by educational authorities to experiment with curriculum reform. In other words, online learning shouldn't be a carbon copy of classroom instruction focused on exams, and the curriculum structure of online instruction should be able to support students' overall development and give them the tools they need to meet their demands for lifetime learning. To help students learn the basics of pandemic transmission, foster healthy habits, and become aware of their own responsibility for the prevention and control of the pandemic, topics like pandemic prevention and control, family health education, and psychological health can be incorporated into online teaching curricula. Encourage any additional endeavor, including housework or theme-based education, which helps students develop holistically (22).

Inequality in Online Education Should be Addressed by the Government

Even if openness and accessibility are special benefits of the online classroom, this does not imply that everyone has an equal opportunity to benefit from online education. According to de Waard et al., learners with inadequate network and equipment circumstances find it challenging to fully participate in online learning. Internet-based learning demands perfect network connectivity and effective internet equipment. The digital divide cannot be quickly closed (23). Children from privileged backgrounds can use gigabit-class internet as well as laptops, iPads, smartphones, and other cutting-edge devices when implementing the "School is Out, But Class is On" program, but those from low-income families are unable to access even the most basic network environment and internet equipment. Students in rural and remote places fell behind their urban peers in terms of application skills and efficacy even when faced with the same free teaching resources during the pandemic-induced school suspension, resulting in subpar learning outcomes. In this regard, the government should improve the conditions for disadvantaged students to learn online by providing internet terminals, funding network connections, setting up dedicated locations for internet access, and taking other helpful measures. Additionally, it's important to establish specialized community organizations to involve teachers, administrators, and volunteers in guiding underprivileged students in online learning, assisting them in creating regular learning and life plans, maintaining contact with schools, and monitoring and supporting student digital learning.

Conclusion

The "School is Out, But Class Is On" program offers a significant strategic opportunity to rethink and modernize education in addition to being an emergency response to the COVID-19 pandemic. It is important to emphasize once more that online education does not replicate traditional classroom instruction online but rather marks a trend in the future transformation of education. This widespread use of online learning during the COVID-19 pandemic has helped Chinese schools make the transition from traditional classroom instruction to contemporary instruction supported by Internet technology, improved the digital proficiency of teachers and students, and upgraded their educational concepts. Additionally, it inspires the entire community to consider developing a new, more equitable educational system.

It is important to understand the limitations of the current research on the "School is Out, But Class is On" program. Research on pandemic-induced online teaching practices now focuses primarily on urban areas with developed economies and substantial information technology usage as a result. There are not many studies that focus solely on how the program is implemented in rural communities that lack resources and infrastructure. To increase educational equality and maximize the value of top-notch educational materials, it is advised that further research be done on the effects of the uneven distribution of digital infrastructure in urban and rural areas on large-scale online teaching. Additionally, the characteristics of online instruction vary according to various academic fields and levels of education. Future research should therefore stratify student demands for digital education and increase the practicality of research findings.

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